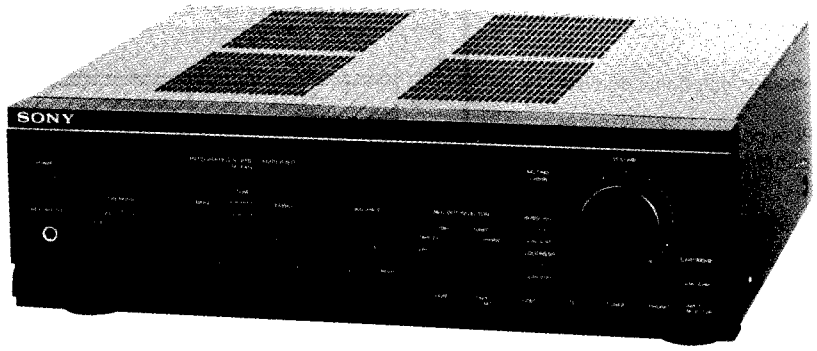
TA-A400

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model



SPECIFICATIONS

Amplifier

Continuous RMS power output (both channels driven simultaneously)

US, Canadian model:
at 20 Hz – 20 kHz
100 W + 100 W (0.05% THD, 8 ohms)
AEP, G-AEP, UK model:
at 1 kHz
110 W + 110 W (5% THD, 4 ohms)
at 20 Hz – 20 kHz
80 W + 80 W (0.05% THD, 4 ohms)
at 40 Hz – 12.5 kHz
90 W + 90 W (0.05% THD, 4 ohms)

Power bandwidth (IHF)
US, Canadian model:
7 Hz – 40 kHz (8 ohms, 50 watts)
AEP, G-AEP, UK model:
7 Hz – 40 kHz (4 ohms, 40 watts)

Dynamic headroom
1.6 dB ('78 IHF)

Harmonic distortion
Less than 0.05% at rated output

Intermodulation (IM) distortion (60 Hz : 7 kHz = 4 : 1)
Less than 0.05% at rated output

Frequency response
PHONO: RIAA equalization curve ±0.5 dB
TUNER, CD, VIDEO/AUX, TAPE1, TAPE2/DAT:
7 Hz – 100 kHz ±3 dB

Residual noise
US, Canadian model:
Less than 300 μV (8 ohms, network A)
AEP, G-AEP, UK model:
Less than 200 μV (4 ohms, network A)

Damping factor
50 (8 ohms, 1 kHz)

Input

Input jack		Jack type	Sensitivity	Impedance	S/N (weighting network, input level)
PHONO	MM	Phono	2.0 mV	50 kilohms	88 dB 86 dB* (A, 2.0 mV)
	MC	Phono	170 μV	100 ohms	68 dB 75 dB* (A, 170 μV)
TUNER CD VIDEO/AUX TAPE		Phono	150 mV	50 kilohms	100 dB 88 dB* (150 mV)

*'78 IHF

Output

REC OUT	Phono jacks	Voltage 150 mV Impedance 1 kilohm
SPEAKERS	—	Accepts speakers of 4 – 16 ohms.
HEAD-PHONES	Stereo phone jack	Accepts low and high impedance headphones.

Tone controls

	Response	Turnover frequency
BASS	±10 dB (100 Hz)	500 Hz
TREBLE	±10 dB (15 kHz)	3 kHz

— Continued on page 2 —

MICROFILM

INTEGRATED STEREO AMPLIFIER

SONY®

AUD

Loudness (Attenuation 30 dB)
US, Canadian model: +7 dB (100 Hz)
+2 dB (10 kHz)
AEP, G-AEP, UK model: +6 dB (100 Hz)
+2 dB (10 kHz)

Subsonic filter: Response: 6 dB/octabe
Cutoff: Below 15 Hz

Muting: –20 dB

General

System: Preamplifier: Low-noise, high-gain equalizer amplifier
Power amplifier: Pure-complementary SEPP OCL power amplifier with all stages directly coupled

Power requirements
US, Canadian model: 120 V AC, 60 Hz
AEP, G-AEP model: 220 V AC (or 240 V AC adjustable by authorized Sony personnel), 50 Hz
UK model: 240 V AC (or 220 V AC adjustable by authorized Sony personnel), 50 Hz

Power consumption
US model: 170 W
Canadian model: 390 VA
AEP, G-AEP model: 180 W
UK model: 480 W

AC outlets: US, Canadian model: 2 switched, total 100 watts max. 1 unswitched, 100 watts max.
AEP, G-AEP model: 3 switched, total 100 watts max.
UK model: 1 switched, 100 watts max.

Dimensions: AEP, G-AEP model:
Approx. 430 x 130 x 360 mm (w/h/d)
(17 x 5⅛ x 14¼ inches)
US, Canadjan, UK model:
Approx. 430 x 130 x 350 mm (w/h/d)
(17 x 5⅛ x 13⅞ inches)

Weight: Approx. 8.7 kg (19 lb 3 oz)

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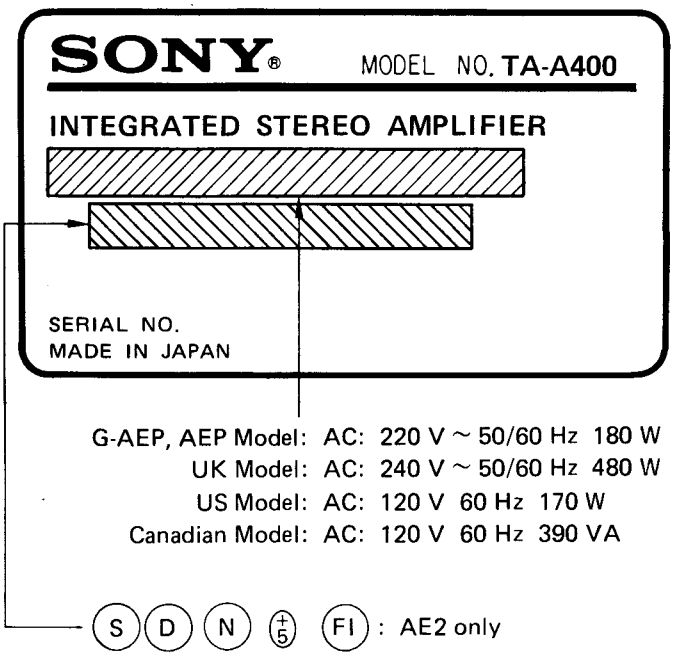
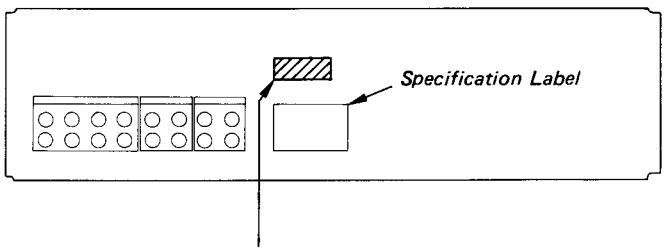
MODEL IDENTIFICATION

– Specification Label –


SONY®
MODEL NO. TA-A400
INTEGRATED STEREO AMPLIFIER
SERIAL NO.
MADE IN JAPAN
G-AEP, AEP Model: AC: 220 V ~ 50/60 Hz 180 W
UK Model: AC: 240 V ~ 50/60 Hz 480 W
US Model: AC: 120 V 60 Hz 170 W
Canadian Model: AC: 120 V 60 Hz 390 VA
S D N ±5 FI : AE2 only

– Back Panel –



DBP mark is carved only in G-AEP model as shown above.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SAFETY CHECK-OUT (US Model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

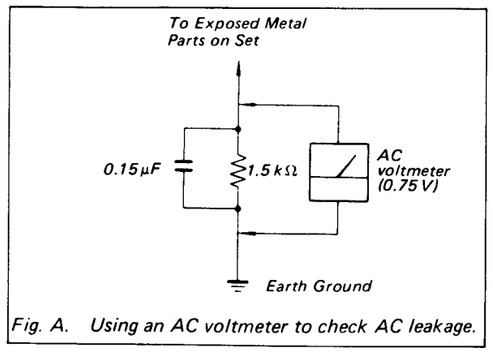
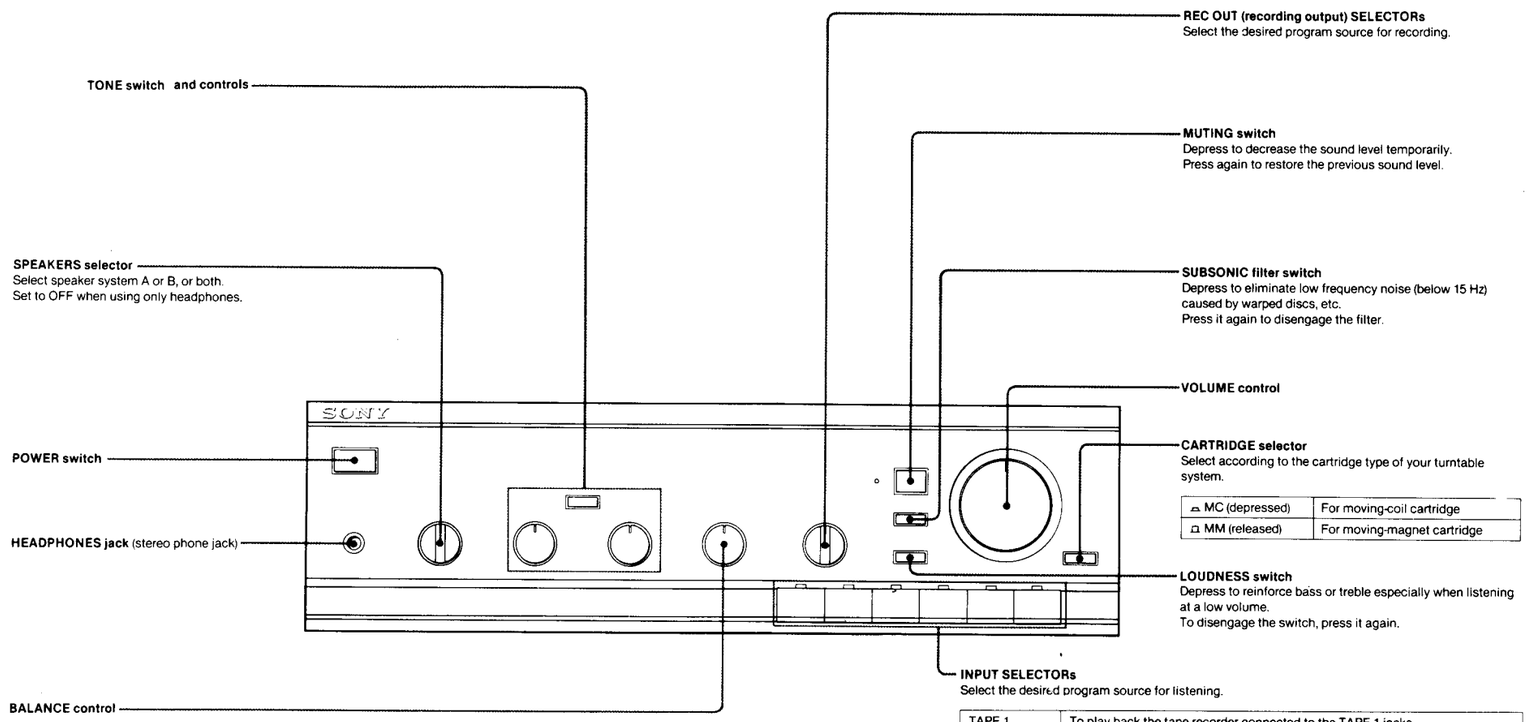


Fig. A. Using an AC voltmeter to check AC leakage.

LOCATION AND FUNCTION OF CONTROLS



TONE switch and controls

SPEAKERS selector
Select speaker system A or B, or both.
Set to OFF when using only headphones.

POWER switch

HEADPHONES jack (stereo phone jack)

BALANCE control

REC OUT (recording output) SELECTORs
Select the desired program source for recording.

MUTING switch
Depress to decrease the sound level temporarily.
Press again to restore the previous sound level.

SUBSONIC filter switch
Depress to eliminate low frequency noise (below 15 Hz) caused by warped discs, etc.
Press it again to disengage the filter.

VOLUME control

CARTRIDGE selector
Select according to the cartridge type of your turntable system.

MC (depressed)	For moving-coil cartridge
MM (released)	For moving-magnet cartridge

LOUDNESS switch
Depress to reinforce bass or treble especially when listening at a low volume.
To disengage the switch, press it again.

INPUT SELECTORs
Select the desired program source for listening.

TAPE 1	To play back the tape recorder connected to the TAPE 1 jacks
TAPE 2/DAT	To play back the tape recorder connected to the TAPE 2/DAT jacks
VIDEO/AUX	To listen to the sound of the video equipment or other audio equipment connected to the VIDEO/AUX INPUT jacks
CD	To play back the compact disc player connected to the CD INPUT jacks
TUNER	To listen to the radio programs of the tuner connected to the TUNER INPUT jacks
PHONO	To play the turntable system connected to the PHONO INPUT jacks

PARTS IDENTIFICATION OF THE REAR PANEL

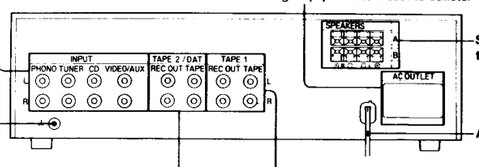
INPUT jacks (phono)

PHONO	Connect a turntable system.
TUNER	Connect a tuner.
CD	Connect a compact disc player.
VIDEO/AUX	Connect to the audio output jacks of a VCR or other audio equipment.

AC OUTLETs
Use these to power other audio units whose power consumption is less than 100 watts.

SWITCHED	Controlled by the POWER switch.
UNSWITCHED (US, Canadian model)	Always live regardless of the POWER switch position.

Caution
Do not connect any home electrical appliances or other high-wattage equipment to these AC outlets.



SPEAKERS A, B terminals

AC power cord

⏚ (phono ground) terminal
To prevent hum, be sure to connect the ground wire of the turntable system.

TAPE 2/DAT input/output jacks (phono)
Connect to the input and output jacks of a tape recorder.

REC OUT	To the LINE IN jacks
TAPE	To the LINE OUT jacks

TAPE 1 input/output jacks (phono)
Connect to the input and output jacks of a tape recorder.

REC OUT	To the LINE IN jacks
TAPE	To the LINE OUT jacks

NOTE:

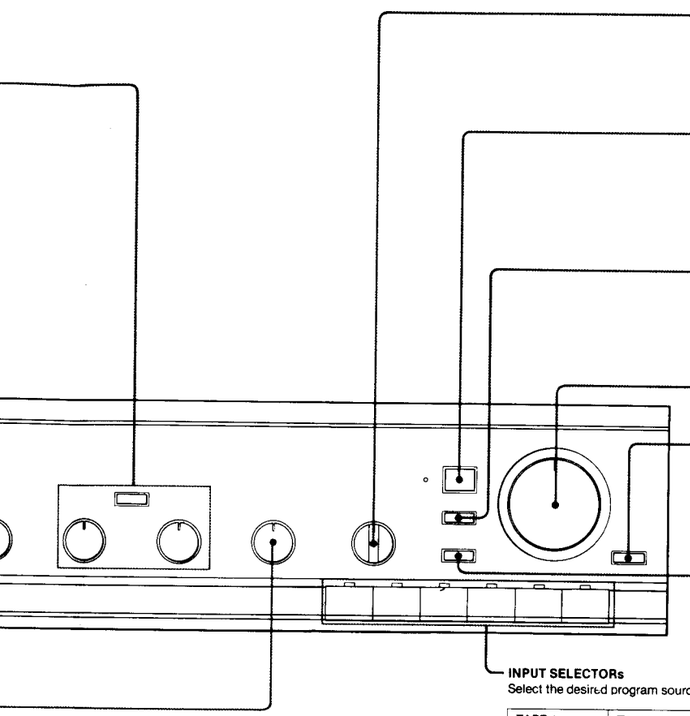
- Adjustme
  the POWE

Bias Current

Setting:
AUDIO S
Input Sig

Procedure:
Adjust R
obtain 3
respectiv

TROLS



REC OUT (recording output) SELECTORs
Select the desired program source for recording.

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TUNER	To listen to the radio programs of the tuner connected to the TUNER INPUT jacks
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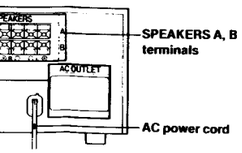


SPEAKERS A, B terminals

AC power cord

utput jacks (phono)
input and output jacks of a tape recorder.

	To the LINE IN jacks
	To the LINE OUT jacks

SECTION 1
ELECTRICAL ADJUSTMENTS

NOTE:

- Adjustments should be performed 10 minutes after the POWER switch is on (POWER ON).

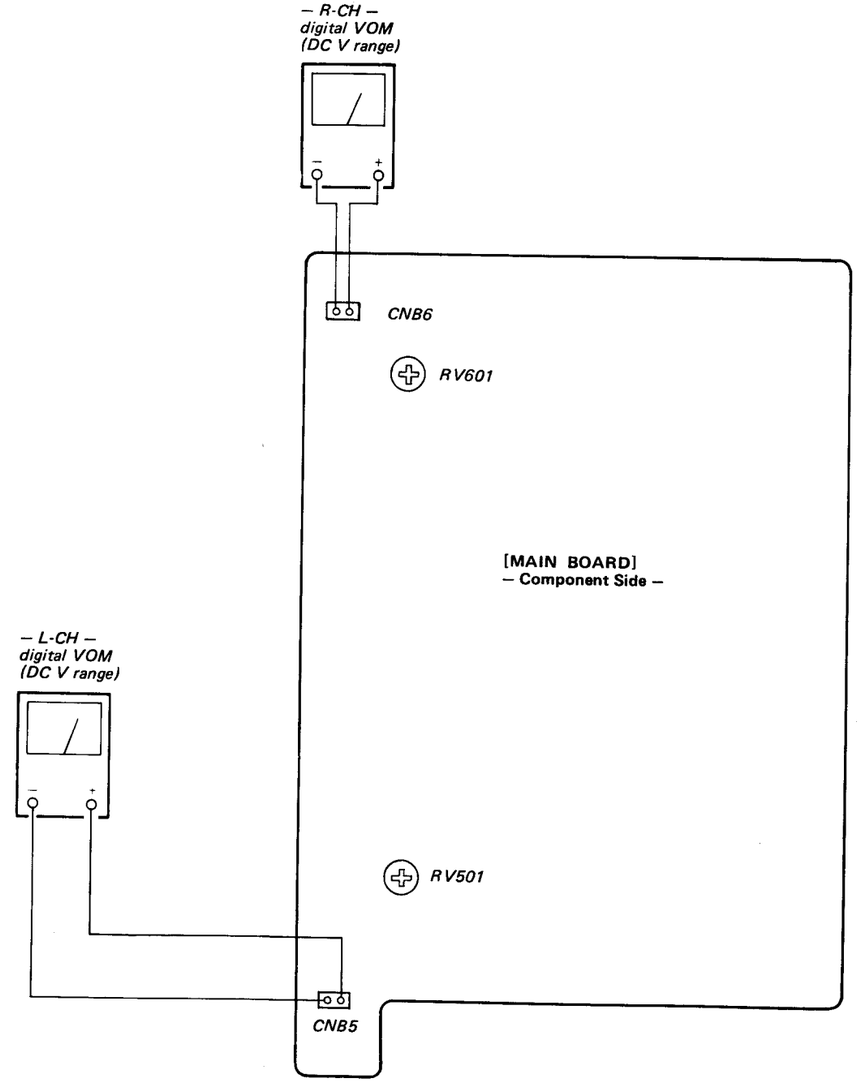
Bias Current Adjustment

Setting:

AUDIO SOURCE selector: TUNER
Input Signal: No signal input

Procedure:

Adjust RV501 (L-CH) and RV601 (R-CH) so as to obtain 3 mV at CNB5 (L-CH) and CNB6 (R-CH) respectively.



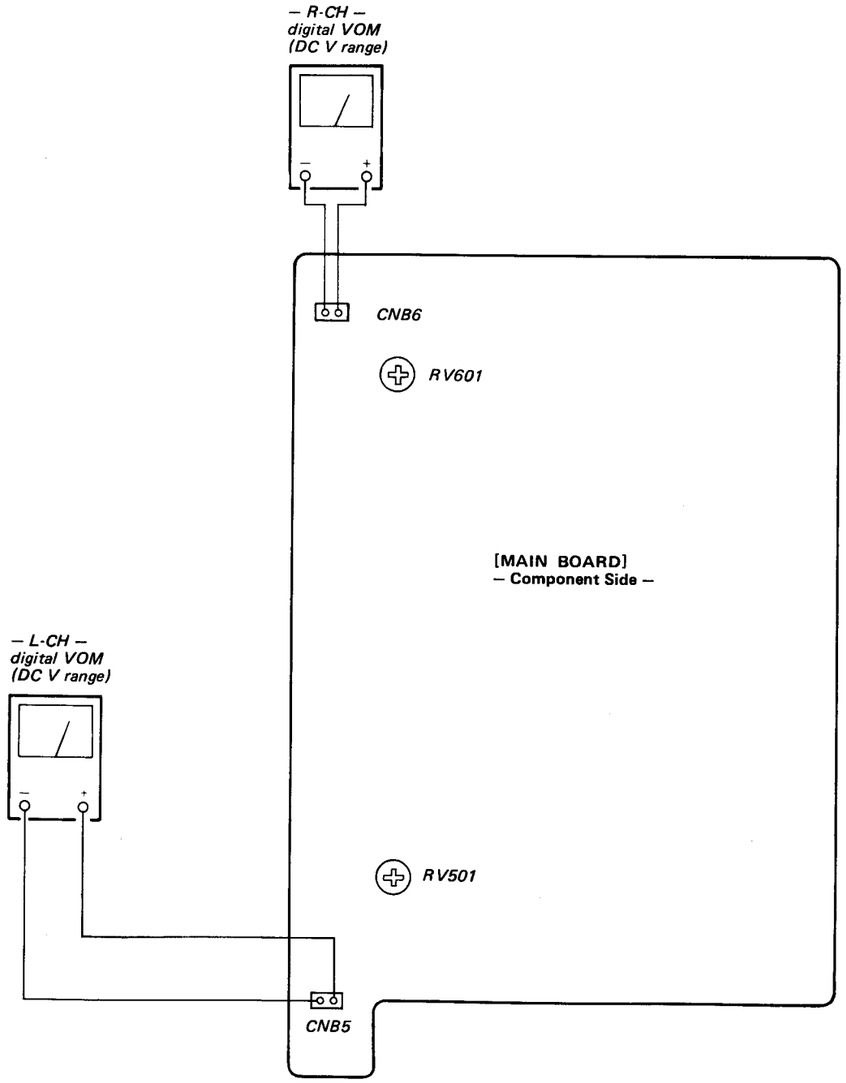
SECTION 1
ELECTRICAL ADJUSTMENTS

should be performed 10 minutes after
switch is on (POWER ON).

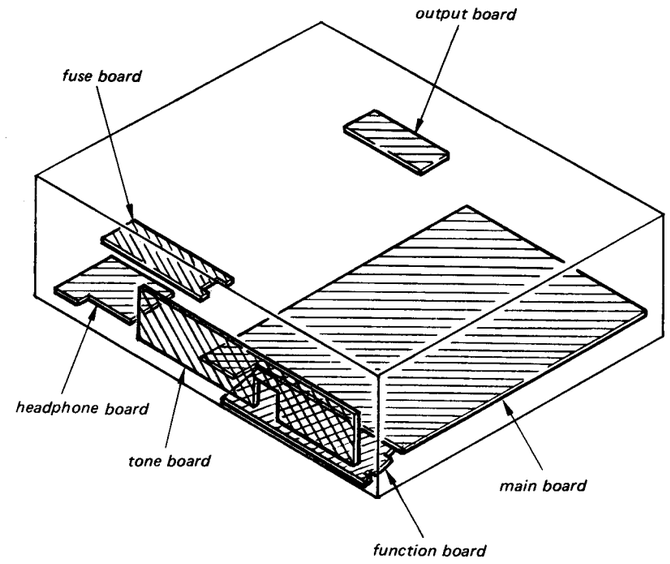
djustment

URCE selector: TUNER
: No signal input

01 (L-CH) and RV601 (R-CH) so as to
V at CNB5 (L-CH) and CNB6 (R-CH)



● **Circuit Boards Location**

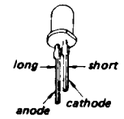


● **Semiconductor Lead Layouts**

BA4560

2SA1175
2SC2785

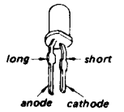
SEL1910W



M5218L
μPC1237HA

2SA1346
2SC634SP

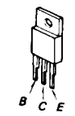
SEL4510C-C



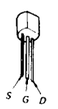
2SA979

2SA1491
2SC3855

2SA985
2SA985A
2SB1094-L
2SC2275
2SC2275A
2SC3514
2SD1585-L

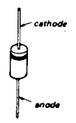


2SK246GR3



2SA988
2SC1383
2SC1841
2SC2545

10E2N
1SS131
1SS132
HZ15-2L
HZ3B-2L
HZ6A-2L
HZ7B-2K



SECTION 2
DIAGRAMS

2-1. MOUNTING DIAGRAM

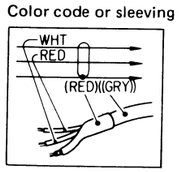
- See page 6 for Circuit Boards Location.
- See page 7 for Semiconductor Lead Layouts.

• SEMICONDUCTOR LOCATION

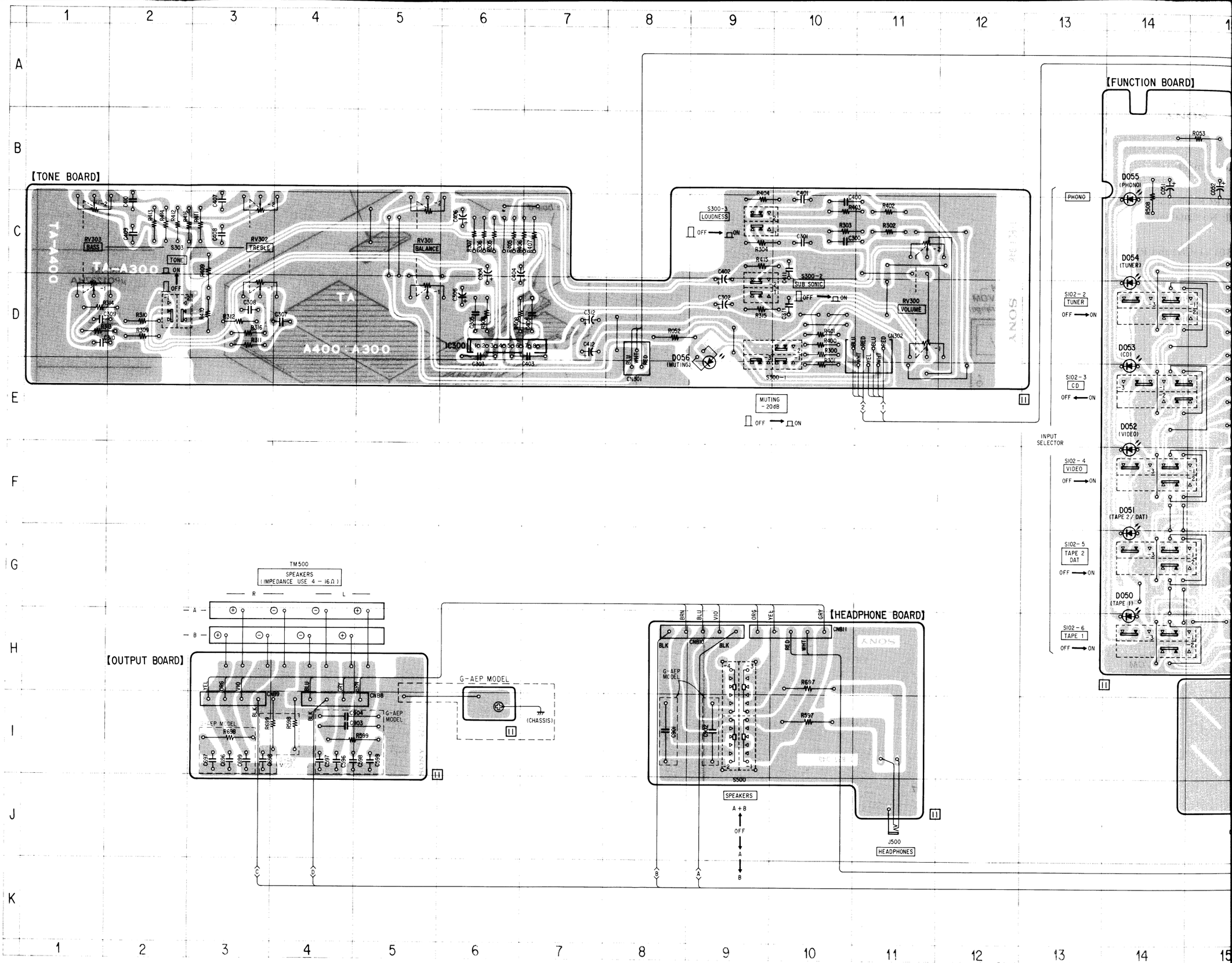
Ref. No.	Location	Ref. No.	Location
D050	G-14	Q505	J-18
D051	F-14	Q506	H-16
D052	E-14	Q507	I-19
D053	D-14	Q508	H-16
D054	C-14	Q509	I-18
D055	B-14	Q510	I-17
D056	D-9	Q511	J-19
D057	F-21	Q512	J-16
D201	B-21	Q513	G-17
D501	H-16	Q514	I-16
D502	H-18	Q601	G-23
D503	G-17	Q602	H-23
D504	F-17	Q603	H-24
D601	H-23	Q604	H-25
D602	H-24	Q605	J-23
D603	H-22	Q606	H-23
D604	G-21	Q607	I-25
D700	I-20	Q608	H-23
D701	F-21	Q609	I-25
D702	G-21	Q610	I-23
D703	F-21	Q611	J-24
D800	E-19	Q612	J-22
D802	G-20	Q613	G-23
D803	G-20	Q614	I-22
D804	E-18	Q700	F-19
		Q800	E-19
IC100	B-22	Q801	E-19
IC300	D-6	Q803	E-18
IC700	F-22	Q804	E-18
Q050	E-20		
Q051	E-20		
Q100	B-23		
Q101	B-23		
Q200	C-23		
Q201	C-23		
Q501	H-17		
Q502	G-17		
Q503	H-18		
Q504	H-18		

Note:

- Color code or sleeving over the end of the jacket.



- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.



【FUNCTION BOARD】

【MAIN BOARD】

【HEADPHONE BOARD】

RV301 BALANCE

S300-3 LOUDNESS

S300-2 SUB SONIC

S300-1

RV300 VOLUME

D056 (MUTING)

MUTING -20dB

PHONO

SI02-2 TUNER

SI02-3 CD

SI02-4 VIDEO

SI02-5 TAPE 2 DAT

SI02-6 TAPE 1

INPUT SELECTOR

D055 (PHONO)

D054 (TUNER)

D053 (CD)

D052 (VIDEO)

D051 (TAPE 2 / DAT)

D050 (TAPE 1)

SI01 REC OUT SELECTOR

PHONO ← TUNER ← CD ← VIDEO ← TAPE 2 → 1 ← TAPE 1 → 2

G-AEP MODEL

US, CANADIAN G-AEP MODEL

(CHASSIS)

TP (BIAS)

J500 HEADPHONES

SPEAKERS

A + B

OFF

A

B

IC300

IC100

IC700

Q512

Q505

Q511

Q612

Q605

TH700

D700

D802

D803

RY700

【MAIN BOARD】

US, CANADIAN, AEP, UK MODEL

G-AEP MODEL

S101 REC OUT SELECTOR: PHONO ← TUNER ← CD ← VIDEO ← TAPE 2-1 → TAPE 1-2

S103 CARTRIDGE: MM → MC

IC100

IC700

RY700

CN303: RED, WHT, BLU, YEL, WHT, RED, BLU

CN304: RED, WHT, BLU

CN83: RED, BLK

CN87: RED, WHT

CN84: BLK, BLK, BLK, BLK

CN85: TP (BIAS)

CN86: TP (BIAS)

TH700 (CHASSIS)

JI02-1 (L) PHONO
JI02-2 (R)
JI02-3 (L) TUNER
JI02-4 (R)
JI01-1 (L) CD
JI01-2 (R)
JI01-3 (L) VIDEO
JI01-4 (R)
JI01-5 (L) REC OUT
JI01-6 (R)
JI00-1 (L) TAPE
JI00-2 (R)
JI00-3 (L) REC OUT
JI00-4 (R)
JI00-5 (L) TAPE
JI00-6 (R)

INPUT

TAPE RECORDER 2 DAT

TAPE RECORDER 1

AEP, UK MODEL

T1 POWER

LI01 LI00 LI02 LI03 LI04 LI05 LI06 LI07 LI08 LI09 L200 L201 L202 L203 L204 L205 L206 L207 L208 L209 L210 L211 L212 L213 L214 L215 L216 L217 L218 L219 L220 L221 L222 L223 L224 L225 L226 L227 L228 L229 L230 L231 L232 L233 L234 L235 L236 L237 L238 L239 L240 L241 L242 L243 L244 L245 L246 L247 L248 L249 L250 L251 L252 L253 L254 L255 L256 L257 L258 L259 L260 L261 L262 L263 L264 L265 L266 L267 L268 L269 L270 L271 L272 L273 L274 L275 L276 L277 L278 L279 L280 L281 L282 L283 L284 L285 L286 L287 L288 L289 L290 L291 L292 L293 L294 L295 L296 L297 L298 L299 L300 L301 L302 L303 L304 L305 L306 L307 L308 L309 L310 L311 L312 L313 L314 L315 L316 L317 L318 L319 L320 L321 L322 L323 L324 L325 L326 L327 L328 L329 L330 L331 L332 L333 L334 L335 L336 L337 L338 L339 L340 L341 L342 L343 L344 L345 L346 L347 L348 L349 L350 L351 L352 L353 L354 L355 L356 L357 L358 L359 L360 L361 L362 L363 L364 L365 L366 L367 L368 L369 L370 L371 L372 L373 L374 L375 L376 L377 L378 L379 L380 L381 L382 L383 L384 L385 L386 L387 L388 L389 L390 L391 L392 L393 L394 L395 L396 L397 L398 L399 L400 L401 L402 L403 L404 L405 L406 L407 L408 L409 L410 L411 L412 L413 L414 L415 L416 L417 L418 L419 L420 L421 L422 L423 L424 L425 L426 L427 L428 L429 L430 L431 L432 L433 L434 L435 L436 L437 L438 L439 L440 L441 L442 L443 L444 L445 L446 L447 L448 L449 L450 L451 L452 L453 L454 L455 L456 L457 L458 L459 L460 L461 L462 L463 L464 L465 L466 L467 L468 L469 L470 L471 L472 L473 L474 L475 L476 L477 L478 L479 L480 L481 L482 L483 L484 L485 L486 L487 L488 L489 L490 L491 L492 L493 L494 L495 L496 L497 L498 L499 L500 L501 L502 L503 L504 L505 L506 L507 L508 L509 L510 L511 L512 L513 L514 L515 L516 L517 L518 L519 L520 L521 L522 L523 L524 L525 L526 L527 L528 L529 L530 L531 L532 L533 L534 L535 L536 L537 L538 L539 L540 L541 L542 L543 L544 L545 L546 L547 L548 L549 L550 L551 L552 L553 L554 L555 L556 L557 L558 L559 L560 L561 L562 L563 L564 L565 L566 L567 L568 L569 L570 L571 L572 L573 L574 L575 L576 L577 L578 L579 L580 L581 L582 L583 L584 L585 L586 L587 L588 L589 L590 L591 L592 L593 L594 L595 L596 L597 L598 L599 L600 L601 L602 L603 L604 L605 L606 L607 L608 L609 L610 L611 L612 L613 L614 L615 L616 L617 L618 L619 L620 L621 L622 L623 L624 L625 L626 L627 L628 L629 L630 L631 L632 L633 L634 L635 L636 L637 L638 L639 L640 L641 L642 L643 L644 L645 L646 L647 L648 L649 L650 L651 L652 L653 L654 L655 L656 L657 L658 L659 L660 L661 L662 L663 L664 L665 L666 L667 L668 L669 L670 L671 L672 L673 L674 L675 L676 L677 L678 L679 L680 L681 L682 L683 L684 L685 L686 L687 L688 L689 L690 L691 L692 L693 L694 L695 L696 L697 L698 L699 L700 L701 L702 L703 L704 L705 L706 L707 L708 L709 L710 L711 L712 L713 L714 L715 L716 L717 L718 L719 L720 L721 L722 L723 L724 L725 L726 L727 L728 L729 L730 L731 L732 L733 L734 L735 L736 L737 L738 L739 L740 L741 L742 L743 L744 L745 L746 L747 L748 L749 L750 L751 L752 L753 L754 L755 L756 L757 L758 L759 L760 L761 L762 L763 L764 L765 L766 L767 L768 L769 L770 L771 L772 L773 L774 L775 L776 L777 L778 L779 L780 L781 L782 L783 L784 L785 L786 L787 L788 L789 L790 L791 L792 L793 L794 L795 L796 L797 L798 L799 L800 L801 L802 L803 L804 L805 L806 L807 L808 L809 L810 L811 L812 L813 L814 L815 L816 L817 L818 L819 L820 L821 L822 L823 L824 L825 L826 L827 L828 L829 L830 L831 L832 L833 L834 L835 L836 L837 L838 L839 L840 L841 L842 L843 L844 L845 L846 L847 L848 L849 L850 L851 L852 L853 L854 L855 L856 L857 L858 L859 L860 L861 L862 L863 L864 L865 L866 L867 L868 L869 L870 L871 L872 L873 L874 L875 L876 L877 L878 L879 L880 L881 L882 L883 L884 L885 L886 L887 L888 L889 L890 L891 L892 L893 L894 L895 L896 L897 L898 L899 L900 L901 L902 L903 L904 L905 L906 L907 L908 L909 L910 L911 L912 L913 L914 L915 L916 L917 L918 L919 L920 L921 L922 L923 L924 L925 L926 L927 L928 L929 L930 L931 L932 L933 L934 L935 L936 L937 L938 L939 L940 L941 L942 L943 L944 L945 L946 L947 L948 L949 L950 L951 L952 L953 L954 L955 L956 L957 L958 L959 L960 L961 L962 L963 L964 L965 L966 L967 L968 L969 L970 L971 L972 L973 L974 L975 L976 L977 L978 L979 L980 L981 L982 L983 L984 L985 L986 L987 L988 L989 L990 L991 L992 L993 L994 L995 L996 L997 L998 L999

UK MODEL

CNJ1 AC OUTLET

【FUSE BOARD】

CP1

CNB1 CNB2

F1 F2

C1 C2

AEP, G-AEP MODEL

CNJ1,2,3 AC OUTLET

CP1 AC IN

US, CANADIAN MODEL

(SWITCHED) (UNSWITCHED) CNJ1 AC OUTLET

CP1 AC IN

【FUSE BOARD】

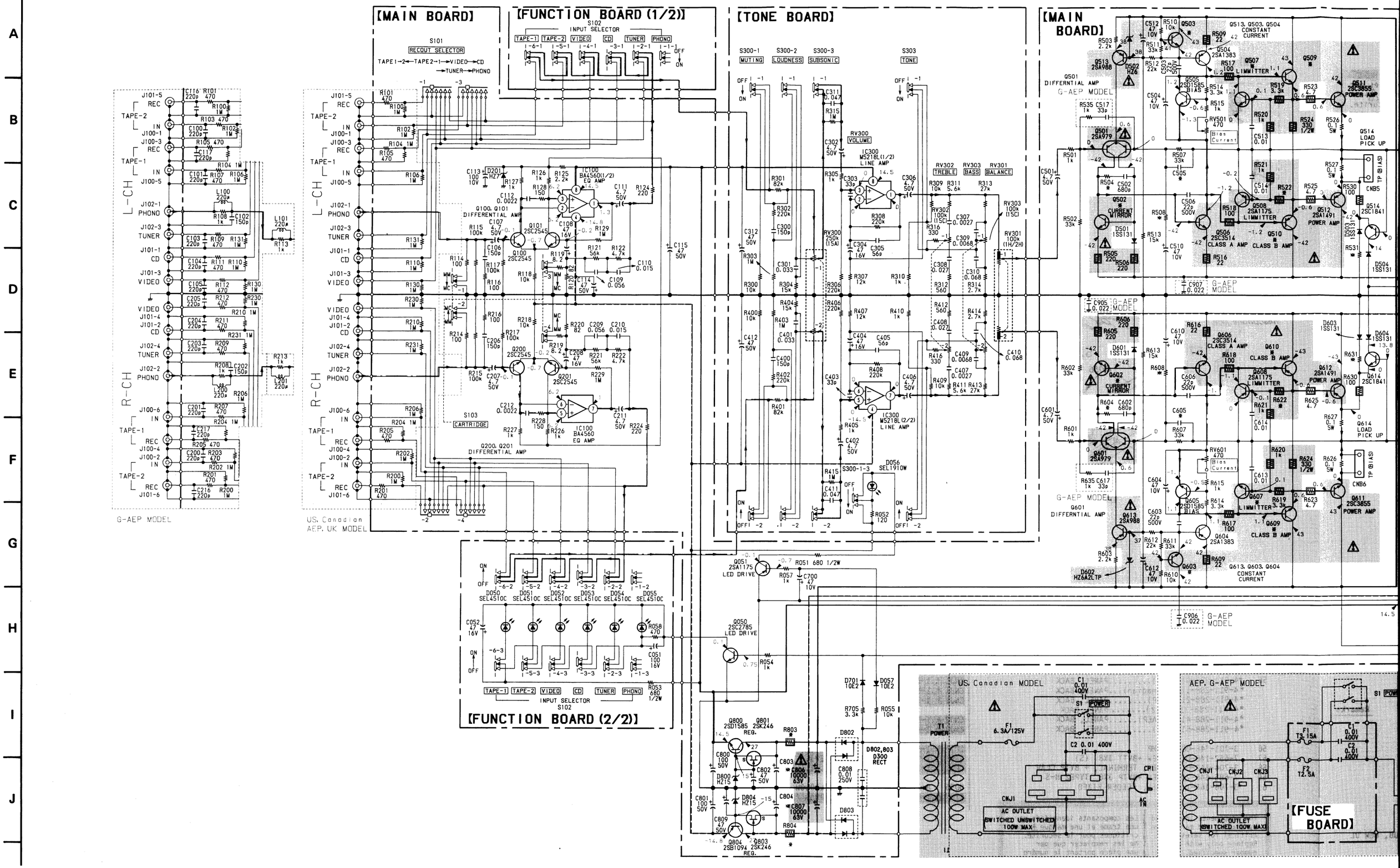
CNB1 CNB2

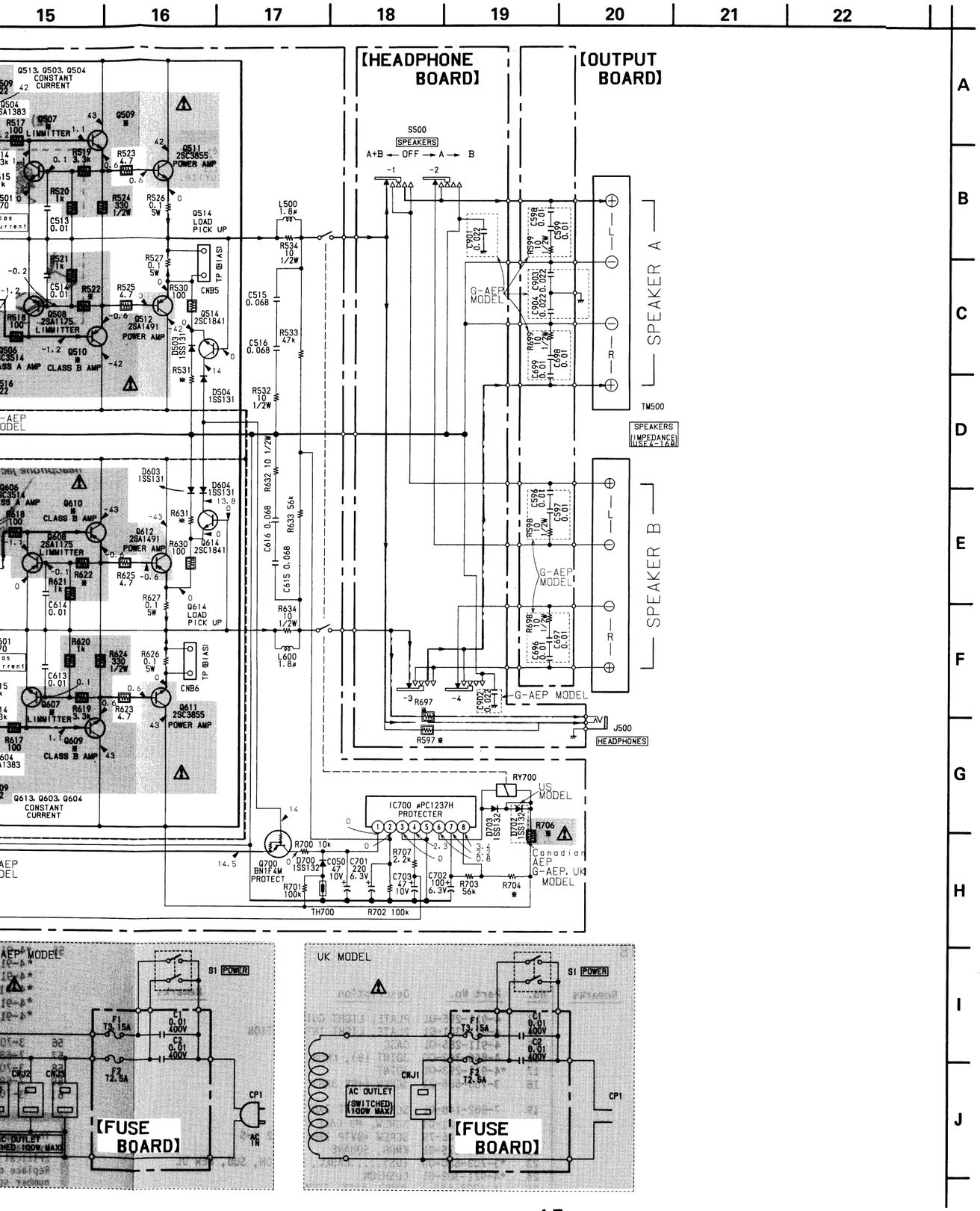
F1

C1 C2

POWER ON ← OFF

SONY


【MAIN BOARD】
【FUNCTION BOARD (1/2)】
【TONE BOARD】
【MAIN BOARD】
【FUNCTION BOARD (2/2)】
【FUSE BOARD】
L-CH
R-CH
G-AEP MODEL
US, Canadian
AEP, UK MODEL
US, Canadian MODEL
AEP, G-AEP MODEL
S101 RECUT SELECTOR
TAPE1→2←TAPE2→1→VIDEO→CD
→TUNER→PHONO
S102 INPUT SELECTOR
TAPE-1 TAPE-2 VIDEO CD TUNER PHONO
S103 CARTRIDGE
S300-1 MUTING
S300-2 LOUDNESS
S300-3 SUBSONIC
S303 TONE
RV300 VOLUME
RV302 TREBLE
RV303 BASS
RV301 BALANCE
IC100 BA4560(1/2) EQ AMP
IC300 MS218L(1/2) LINE AMP
IC300 MS218L(2/2) LINE AMP
Q100, Q101 DIFFERENTIAL AMP
Q200, Q201 DIFFERENTIAL AMP
Q501 DIFFERENTIAL AMP
Q601 DIFFERNTIAL AMP
Q503, Q504 CONSTANT CURRENT
Q613, Q603, Q604 CONSTANT CURRENT
Q051 2SA1175 LED DRIVE
Q050 2SC2785 LED DRIVE
Q800 2SD1585 REG.
Q801 2SK246 REG.
Q804 2SB1094 REG.
Q803 2SK246 REG.
D802,803 D300 RECT
T1 POWER
F1 6.3A/125V
F1 T3.15A
F2 T2.5A
S1 POWER
AC OUTLET SWITCHED UNSWITCHED 100W MAX
AC OUTLET SWITCHED 100W MAX
CNJ1 CNJ2 CNJ3
CP1 AC IN
G-AEP MODEL



- Type and value of ✱ marking parts differ depending on destinations.

Ref. No.	US, Canadian	AEP, UK	G-AEP
C505	6.8p	←	10p
C605	6.8p	←	10p
C803	470/50V	470/35V	←
C804	470/50V	470/35V	←
Q502	2SC2785	2SC634SP	←
Q503	2SC2785	2SC634SP	←
Q507	2SC2785	2SC634SP	←
Q509	2SC2275A	2SC2275	←
Q510	2SC985A	2SC985	←
Q602	2SC2785	2SC634SP	←
Q603	2SC2785	2SC634SP	←
Q607	2SC2785	2SC634SP	←
Q609	2SC2275A	2SC2275	←
Q610	2SC985A	2SC985	←
R504	330	←	560
R508	1.8k	2.7k	←
R522	2.2k	2.7k	←
R531	15k	4.7k	←
R597	820/2W	470/2W	←
R604	330	←	560
R608	1.8k	2.7k	←
R622	2.2k	2.7k	←
R631	15k	4.7k	←
R697	820/2W	470/2W	←
R704	22k	15k	←
R706	820/3W	560/3W	←
R803	560/3W	470/3W	←
R804	560/3W	470/3W	←

Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- ✱ ——→ : L CH signal path.
- ✱ - - -→ : R CH signal path.
- ⊏W⊐ : nonflammable resistor.
- ▬ : B+ bus.
- ▬ ▬ : B− bus.
- ▭ : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- Readings are taken under no-signal conditions with a VOM (50 kΩ/V).

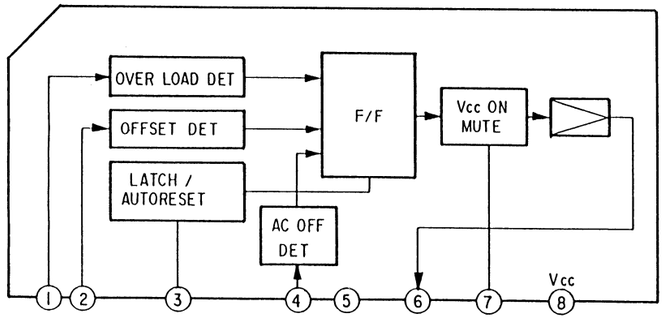
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- Switch

Ref. No.	Switch	Position
S1	POWER	OFF
S101	REC OUT SELECTOR	TAPE1→2
S102-1	PHONO	OFF
S102-2	TUNER	OFF
S102-3	CD	ON
S102-4	VIDEO	OFF
S102-5	TAPE 2/DAT	OFF
S102-6	TAPE 1	OFF
S103	CARTRIDGE	MM
S300-1	MUTING	OFF
S300-2	LOUDNESS	OFF
S300-3	SUBSONIC	OFF
S303	TONE	OFF
S500	SPEAKERS	OFF

- **IC700 (μPC1237HA) BLOCK DIAGRAM**



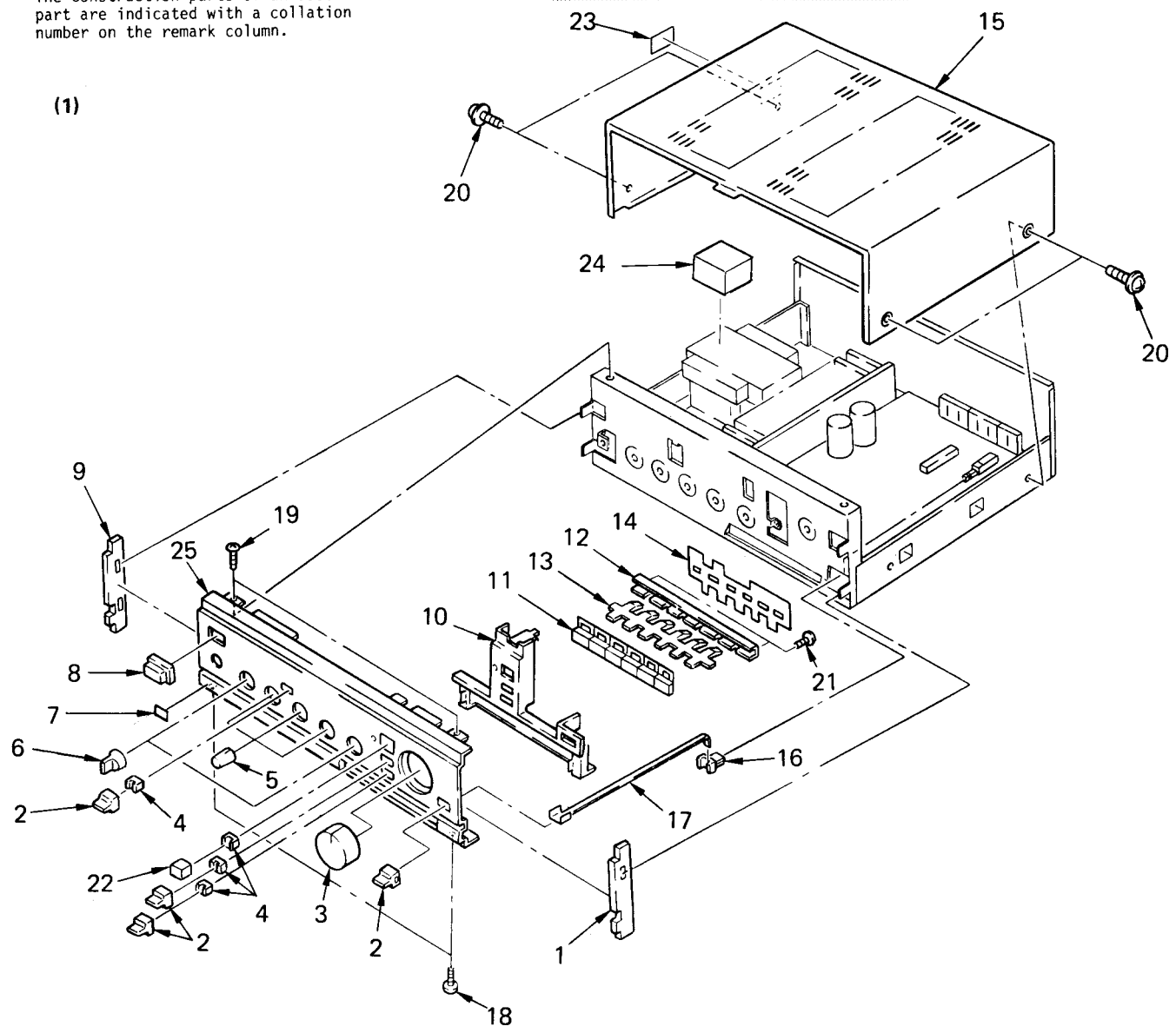
SECTION 3
EXPLODED VIEWS AND PARTS LIST

NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The construction parts of an assembled part are indicated with a collation number on the remark column.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

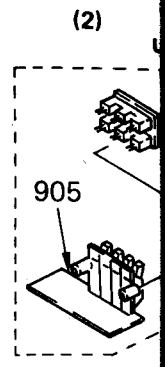
Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

(1)



No.	Part No.	Description	Remarks
1	*4-911-296-01	PANEL (RIGHT), SIDE	
2	3-315-105-21	KNOB (5X16), SQUARE	
3	X-4919-703-1	KNOB (VOL) ASSY	
4	*4-864-307-00	RING	
5	4-916-746-01	KNOB (DIA.21)	
6	4-916-745-01	KNOB (DIA.21)	
7	3-703-713-41	STICKER, SONY SYMBOL (10)	
8	4-917-460-01	KNOB, POWER	
9	4-911-297-01	PANEL (LEFT), SIDE	
10	4-921-304-01	ESCUTCHEON	
11	X-4904-478-1	BUTTON ASSY	
12	*4-911-292-01	BRACKET	
13	4-911-295-01	PLATE, LIGHT GUIDE	
14	4-921-301-01	PLATE, LIGHT INTERCEPTION	
15	4-911-285-01	CASE	
16	4-866-342-00	JOINT (B), KNOB	
17	*4-911-293-01	JOINT	
18	3-703-685-21	SCREW (+BV 3X8)	
19	7-682-148-01	SCREW +BVTT 3X8 (S)	
20	4-886-821-01	SCREW, M3 CASE	
21	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
22	4-908-875-01	KNOB, SQUARE	
23	*3-703-680-00	(US).....LABEL, CAUTION, SUB, NEW UL	
24	*4-921-308-01	CUSHION	
25	X-4904-480-1	PANEL ASSY, FRONT	

(2)



Supplied with headphone jack

Supplie volume

No.	Part
51	*4-921
52	*4-919
53	*3-703
54	*3-701
55	*4-911
	*4-911
	*4-911
	*4-911
	*4-911
	*4-911
56	3-701
57	7-682
58	3-704
59	7-685
61	*3-706

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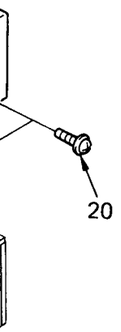
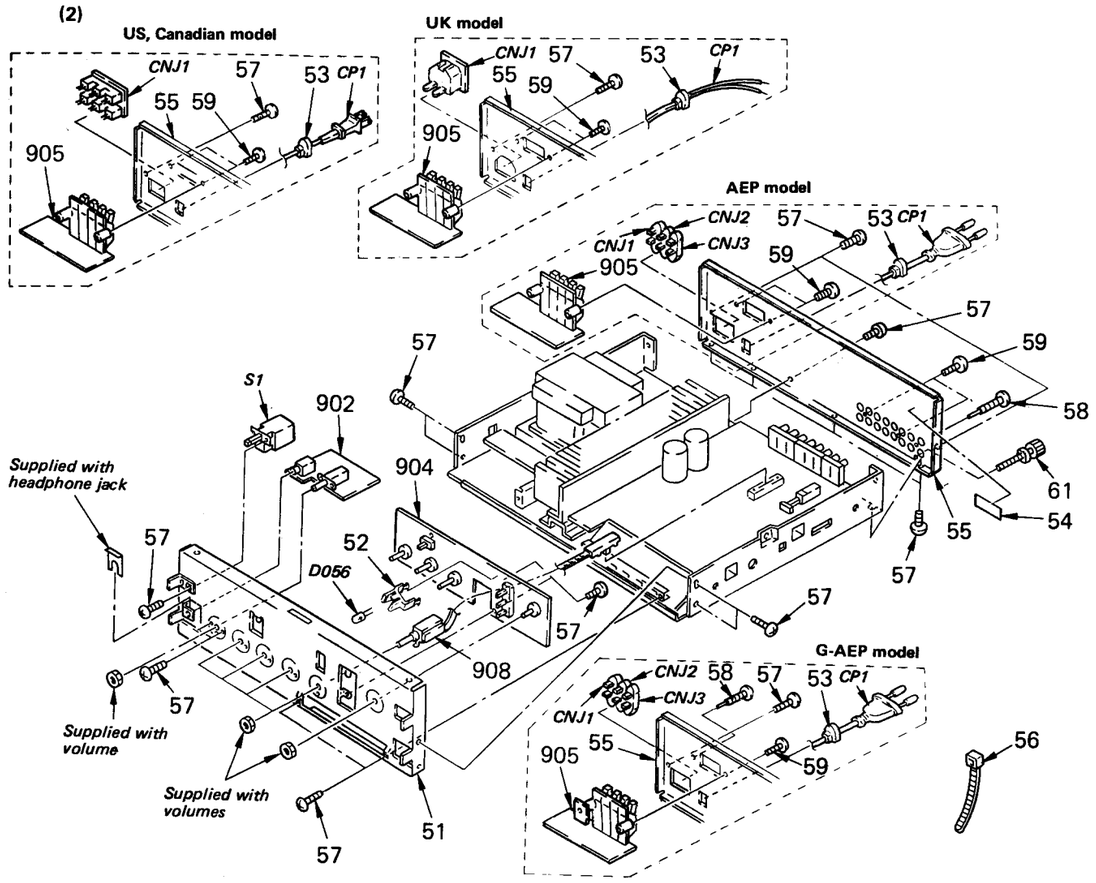


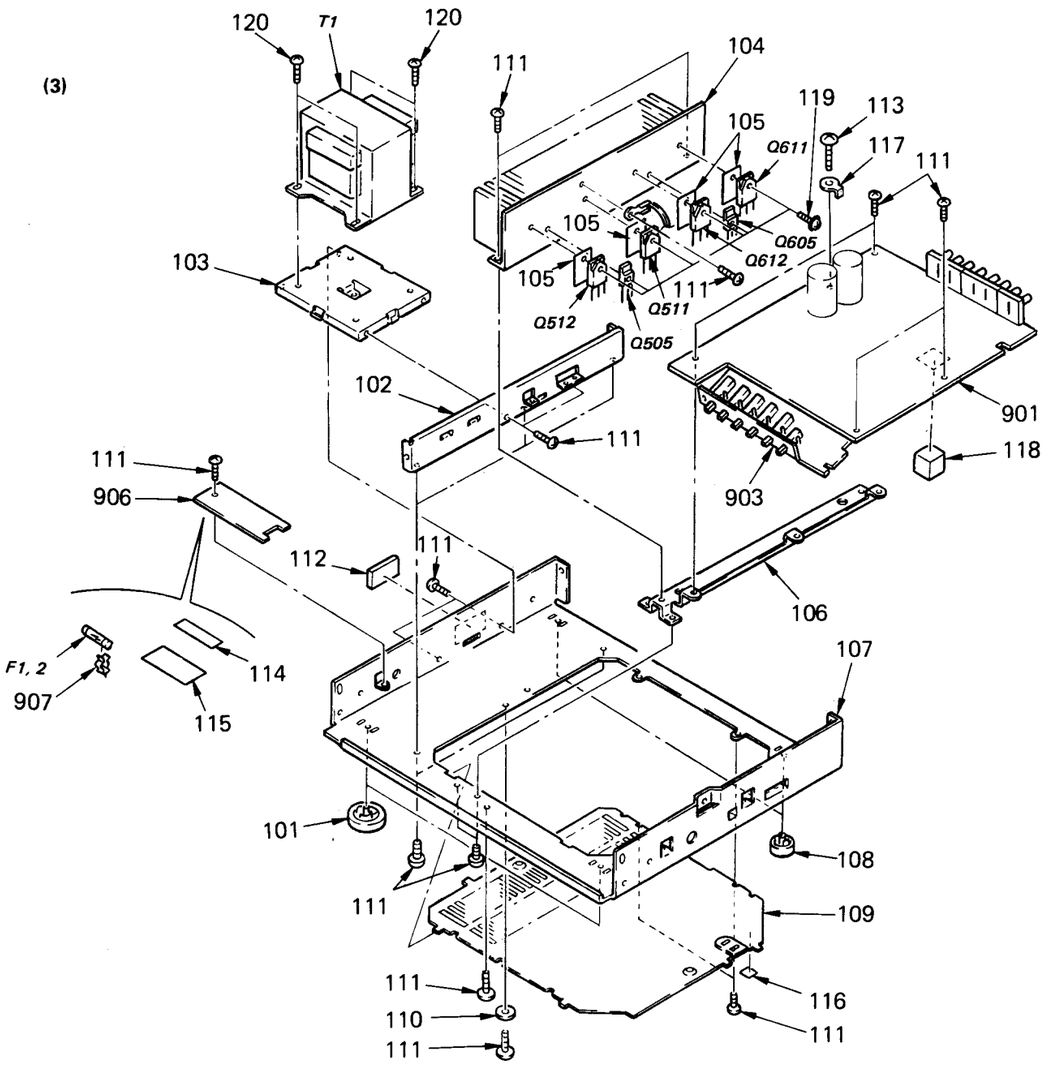


No.	Part No.	Description	Remarks
51	*4-921-306-01	CHASSIS, AMPLIFIER	
52	*4-919-716-01	HOLDER, LED	
53	*3-703-244-00	BUSHING (2104), CORD	
54	*3-701-030-00	LABEL, SERIAL NUMBER	
55	*4-911-288-01	(US).....PANEL, BACK	
	*4-911-288-11	(Canadian)...PANEL, BACK	
	*4-911-288-21	(AEP).....PANEL, BACK	
	*4-911-288-31	(AE2)..... PANEL,BACK	
	*4-911-288-41	(G-AEP).....PANEL, BACK	
	*4-911-288-51	(UK).....PANEL, BACK	
56	3-701-748-00	CLAMP	
57	7-682-148-01	SCREW +BVTT 3X8 (S)	
58	3-704-242-01	SCREW, TERMINAL, + BVTP CLAW	
59	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
61	*3-706-165-00	SCREW, FEEDER FIXED	

No.	Part No.	Description	Remarks
902	*1-623-045-11	PC BOARD, H.P	
904	*1-623-048-11	PC BOARD, TONE	
905	*1-623-049-11	PC BOARD, OUTPUT	
908	1-571-110-11	SWITCH, ROTARY SLIDE	
CNJ1	⚠1-526-791-00	(UK).....OUTLET, AC	
CNJ1	⚠1-526-794-11	(AEP,G-AEP)....OUTLET, AC	
CNJ1	⚠1-526-896-00	(US,Canadian)...OUTLET, AC	
CNJ2	⚠1-526-794-11	(AEP,G-AEP)....OUTLET, AC	
CNJ3	⚠1-526-794-11	(AEP,G-AEP)....OUTLET, AC	
CP1	⚠1-658-942-11	(US,Canadian)...CORD, POWER (POLAR.SPT-2)	
CP1	⚠1-658-944-11	(AEP,G-AEP).....CORD, POWER	
CP1	⚠1-856-946-11	(UK).....CORD, POWER	
D056	8-719-303-59	DIODE SEL1910W	
S1	⚠1-554-880-11	SWITCH, PUSH (AC POWER)(1 KEY)	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



No.	Part No.	Description	Remarks
101	X-3337-104-1	FOOT ASSY, ORNAMENTAL	
102	*4-911-238-01	FRAME	
103	*4-911-294-01	BRACKET (TRANSFORMER)	
104	*4-911-284-01	HEAT SINK	
105	4-911-232-01	SHEET, INSULATING	
106	*4-911-280-01	BRACKET (H)	
107	*4-911-244-01	CHASSIS, MAIN	
108	X-4864-303-0	FOOT ASSY	
109	*4-911-283-01	(US,AEP,G-AEP,UK)...PLATE, BOTTOM	
	4-911-283-11	(Canadian).....PLATE, BOTTOM	
110	4-890-173-00	WASHER	
111	7-682-148-01	SCREW +BVTT 3X8 (S)	
112	9-911-845-XX	SPACER	
113	3-703-685-21	SCREW (+BV 3X8)	
114	3-701-946-28	(US,Canadian)...LABEL, FUSE	
115	*3-703-044-26	(US,Canadian)...LABEL, CAUTION	

No.	Part No.	Description	Remarks
116	*3-703-680-00	(US)...LABEL, CAUTION, SUB, NEW UL	
117	4-870-539-00	PLATE, GROUND	
118	*4-921-309-01	CUSHION	
119	7-682-649-09	SCREW +PSW 3X10	
120	7-682-560-04	SCREW +BVTT 4X6 (S)	
901	*A-4388-661-A	MOUNTED PCB, MAIN	
903	*1-623-046-12	PC BOARD, FUNCTION	
906	*1-623-050-11	PC BOARD, FUSE	
907	1-533-183-11	HOLDER, FUSE	
F1	⚠1-532-237-00	(AEP,G-AEP,UK)...FUSE, TIME-LAG T3.15A	
F2	⚠1-532-286-00	(AEP,G-AEP,UK)...FUSE, TIME-LAG T2.5A	
F1	⚠1-532-748-11	(US,Canadian)....FUSE, GLASS TUBE 6.3A	
Q505	8-729-107-25	TRANSISTOR 2SD1585-L	
Q511	⚠8-729-304-32	TRANSISTOR 2SC3855	
Q512	⚠8-729-304-29	TRANSISTOR 2SA1491	
Q605	8-729-107-25	TRANSISTOR 2SD1585-L	
Q611	⚠8-729-304-32	TRANSISTOR 2SC3855	
Q612	⚠8-729-304-29	TRANSISTOR 2SA1491	
T1	⚠1-448-950-11	(US,Canadian)....TRANSFORMER, POWER	
T1	⚠1-448-951-11	(AEP,G-AEP,UK)...TRANSFORMER, POWER	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

SECTION 4
ELECTRICAL PARTS LIST

NOTE:
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms.
- F : nonflammable

COILS
- MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
901	*A-4388-661-A	MOUNTED PCB, MAIN			
902	*1-623-045-11	PC BOARD, H.P			
903	*1-623-046-11	PC BOARD, FUNCTION			
904	*1-623-048-11	PC BOARD, TONE			
905	*1-623-049-11	PC BOARD, OUTPUT			
906	*1-623-050-11	PC BOARD, FUSE			
907	1-533-183-11	HOLDER, FUSE			
908	1-571-110-11	SWITCH, ROTARY SLIDE			
C1	⚠1-161-744-00	CERAMIC	0.01MF		400V
C2	⚠1-161-744-00	CERAMIC	0.01MF		400V
C050	1-124-446-11	ELECT	47MF	20%	10V
C051	1-124-445-00	ELECT	100MF	20%	16V
C052	1-124-477-11	ELECT	47MF	20%	16V
C100	1-162-286-31	(G-AEP)...CERAMIC	220PF	10%	50V
C101	1-162-286-31	(G-AEP)...CERAMIC	220PF	10%	50V
C102	1-162-284-31	(G-AEP)...CERAMIC	150PF	10%	50V
C103	1-162-286-31	(G-AEP)...CERAMIC	220PF	10%	50V
C104	1-162-286-31	(G-AEP)...CERAMIC	220PF	10%	50V
C105	1-162-286-31	(G-AEP)...CERAMIC	220PF	10%	50V
C106	1-162-284-31	CERAMIC	150PF	10%	50V
C107	1-124-927-11	ELECT	4.7MF	20%	50V
C108	1-124-477-11	ELECT	47MF	20%	16V
C109	1-136-162-00	FILM	0.056MF	5%	50V
C110	1-136-155-00	FILM	0.015MF	5%	50V
C111	1-124-927-11	ELECT	4.7MF	20%	50V
C112	1-161-375-00	CERAMIC	0.0022MF	30%	16V
C113	1-124-443-00	ELECT	100MF	20%	10V
C114	1-124-910-11	ELECT	47MF	20%	50V
C115	1-124-910-11	ELECT	47MF	20%	50V
C116	1-162-286-31	(G-AEP)...CERAMIC	220PF	10%	50V
C117	1-162-286-31	(G-AEP)...CERAMIC	220PF	10%	50V
C200	1-162-286-31	(G-AEP)...CERAMIC	220PF	10%	50V
C201	1-162-286-31	(G-AEP)...CERAMIC	220PF	10%	50V
C202	1-162-284-31	(G-AEP)...CERAMIC	150PF	10%	50V
C203	1-162-286-31	(G-AEP)...CERAMIC	220PF	10%	50V
C204	1-162-286-31	(G-AEP)...CERAMIC	220PF	10%	50V
C205	1-162-286-31	(G-AEP)...CERAMIC	220PF	10%	50V
C206	1-162-284-31	CERAMIC	150PF	10%	50V
C207	1-124-927-11	ELECT	4.7MF	20%	50V
C208	1-124-477-11	ELECT	47MF	20%	16V
C209	1-136-162-00	FILM	0.056MF	5%	50V
C210	1-136-155-00	FILM	0.015MF	5%	50V
C211	1-124-927-11	ELECT	4.7MF	20%	50V
C212	1-161-375-00	CERAMIC	0.0022MF	30%	16V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C216	1-162-286-31	(G-AEP)...CERAMIC	220PF	10%	50V
C217	1-162-286-31	(G-AEP)...CERAMIC	220PF	10%	50V
C300	1-161-270-00	CERAMIC	82PF	5%	50V
C301	1-136-159-00	FILM	0.033MF	5%	50V
C302	1-124-259-00	ELECT	4.7MF	20%	50V
C303	1-162-211-31	CERAMIC	33PF	5%	50V
C304	1-124-236-00	ELECT	47MF	20%	16V
C305	1-162-217-31	CERAMIC	56PF	5%	50V
C306	1-124-259-00	ELECT	4.7MF	20%	50V
C307	1-130-476-00	MYLAR	0.0027MF	5%	50V
C308	1-136-158-00	FILM	0.027MF	5%	50V
C309	1-130-481-00	MYLAR	0.0068MF	5%	50V
C310	1-136-163-00	FILM	0.068MF	5%	50V
C311	1-136-161-00	FILM	0.047MF	5%	50V
C312	1-124-910-11	ELECT	47MF	20%	50V
C400	1-161-270-00	CERAMIC	82PF	5%	50V
C401	1-136-159-00	FILM	0.033MF	5%	50V
C402	1-124-259-00	ELECT	4.7MF	20%	50V
C403	1-162-211-31	CERAMIC	33PF	5%	50V
C404	1-124-236-00	ELECT	47MF	20%	16V
C405	1-162-217-31	CERAMIC	56PF	5%	50V
C406	1-124-259-00	ELECT	4.7MF	20%	50V
C407	1-130-476-00	MYLAR	0.0027MF	5%	50V
C408	1-136-158-00	FILM	0.027MF	5%	50V
C409	1-130-481-00	MYLAR	0.0068MF	5%	50V
C410	1-136-163-00	FILM	0.068MF	5%	50V
C411	1-136-161-00	FILM	0.047MF	5%	50V
C412	1-124-910-11	ELECT	47MF	20%	50V
C501	1-124-927-11	ELECT	4.7MF	20%	50V
C502	1-162-292-31	CERAMIC	680PF	10%	50V
C503	1-161-959-00	CERAMIC	22PF	10%	500V
C504	1-124-446-11	ELECT	47MF	20%	10V
C505	1-161-259-00	(G-AEP)...CERAMIC	10PF	5%	50V
C505	1-162-197-31	(US,Canadian,AEP,UK) ...CERAMIC	6.8PF	10%	50V
C506	1-161-959-00	CERAMIC	22PF	10%	500V
C510	1-124-446-11	ELECT	47MF	20%	10V
C512	⚠1-124-446-11	ELECT	47MF	20%	10V
C513	1-136-153-00	FILM	0.01MF	5%	50V
C514	1-136-153-00	FILM	0.01MF	5%	50V
C515	1-136-163-00	FILM	0.068MF	5%	50V
C516	1-136-163-00	FILM	0.068MF	5%	50V
C517	1-161-265-00	(G-AEP)...CERAMIC	33PF	5%	50V
C596	1-136-153-00	(G-AEP)...FILM	0.01MF	5%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description
C597	1-136-153-00	(G-AEP)...FILM 0.01MF 5% 50V
C598	1-136-153-00	(G-AEP)...FILM 0.01MF 5% 50V
C599	1-136-153-00	(G-AEP)...FILM 0.01MF 5% 50V
C601	1-124-927-11	ELECT 4.7MF 20% 50V
C602	1-162-292-31	CERAMIC 680PF 10% 50V
C603	1-161-959-00	CERAMIC 22PF 10% 500V
C604	1-124-446-11	ELECT 47MF 20% 10V
C605	1-161-259-00	(G-AEP)...CERAMIC 10PF 5% 50V
C605	1-162-197-31	(US,Canadian,AEP,UK) ...CERAMIC 6.8PF 10% 50V
C606	1-161-959-00	CERAMIC 22PF 10% 500V
C610	1-124-446-11	ELECT 47MF 20% 10V
C612	⚠1-124-446-11	ELECT 47MF 20% 10V
C613	1-136-153-00	FILM 0.01MF 5% 50V
C614	1-136-153-00	FILM 0.01MF 5% 50V
C615	1-136-163-00	FILM 0.068MF 5% 50V
C616	1-136-163-00	FILM 0.068MF 5% 50V
C617	1-161-265-00	(G-AEP)...CERAMIC 33PF 5% 50V
C696	1-136-153-00	(G-AEP)...FILM 0.01MF 5% 50V
C697	1-136-153-00	(G-AEP)...FILM 0.01MF 5% 50V
C698	1-136-153-00	(G-AEP)...FILM 0.01MF 5% 50V
C699	1-136-153-00	(G-AEP)...FILM 0.01MF 5% 50V
C700	1-124-446-11	ELECT 47MF 20% 10V
C701	1-124-444-00	ELECT 220MF 20% 6.3V
C702	1-124-468-11	ELECT 100MF 20% 6.3V
C703	1-124-446-11	ELECT 47MF 20% 10V
C800	1-124-122-11	ELECT 100MF 20% 50V
C801	1-124-122-11	ELECT 100MF 20% 50V
C802	1-124-910-11	ELECT 47MF 20% 50V
C803	1-126-104-11	(AEP,G-AEP,UK) ...ELECT 470MF 20% 35V
C803	1-124-913-11	(US,Canadian) ...ELECT 470MF 20% 50V
C804	1-126-104-11	(AEP,G-AEP,UK) ...ELECT 470MF 20% 35V
C804	1-124-913-11	(US,Canadian) ...ELECT 470MF 20% 50V
C806	⚠1-125-479-11	ELECT(BLOCK) 10000MF 20% 63V
C807	⚠1-125-479-11	ELECT(BLOCK) 10000MF 20% 63V
C808	1-102-355-00	CERAMIC 0.01MF 250V
C809	1-124-910-11	ELECT 47MF 20% 50V
C901	1-161-494-00	(G-AEP)...CERAMIC 0.022MF 30% 25V
C902	1-161-494-00	(G-AEP)...CERAMIC 0.022MF 30% 25V
C903	1-161-494-00	(G-AEP)...CERAMIC 0.022MF 30% 25V
C904	1-161-494-01	(G-AEP)...CERAMIC 0.022MF 30% 25V
C905	1-161-494-00	(G-AEP)...CERAMIC 0.022MF 30% 25V
C906	1-101-005-00	(G-AEP)...CERAMIC 0.022MF Z% 50V
C907	1-101-005-00	(G-AEP)...CERAMIC 0.022MF Z% 50V
CN301	*1-566-451-11	HOUSING, CONNECTOR 3P
CN302	*1-566-452-11	HOUSING, CONNECTOR 7P
CN303	*1-566-452-11	HOUSING, CONNECTOR 7P
CN304	*1-566-451-11	HOUSING, CONNECTOR 3P
CNB1	*1-535-140-00	(AEP,G-AEP,UK) ...BASE POST 22MM (10MM PITCH) 3P
CNB1	*1-535-139-00	(US,Canadian) ...BASE POST 22MM (10MM PITCH) 2P
CNB2	*1-535-141-00	BASE POST 22MM (10MM PITCH) 4P
CNB3	*1-535-116-00	TERMINAL
CNB4	*1-535-117-00	TERMINAL

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ELECTRICAL PARTS

Ref.No.	Part No.	Description
CNB5	*1-535-115-00	TERMINAL
CNB6	*1-535-115-00	TERMINAL
CNB7	*1-535-115-00	TERMINAL
CNB8	*1-535-117-00	TERMINAL
CNB9	*1-535-117-00	TERMINAL
CNB10	*1-535-118-00	TERMINAL
CNB11	*1-535-118-00	TERMINAL
CNJ1	⚠1-526-751-00	(UK).....OUTLET, AC
CNJ1	⚠1-526-794-11	(AEP,G-AEP).....OUTLET, AC
CNJ1	⚠1-526-896-00	(US,Canadian)...OUTLET, AC
CNJ2	⚠1-526-794-11	(AEP,G-AEP).....OUTLET, AC
CNJ3	⚠1-526-794-11	(AEP,G-AEP).....OUTLET, AC
CP1	⚠1-558-942-11	(US,Canadian)..CORD, POWER(POLAR.SPT-2)
CP1	⚠1-558-944-11	(AEP,G-AEP)....CORD, POWER
CP1	⚠1-558-946-11	(UK).....CORD, POWER
D050	8-719-303-64	DIODE SEL4510C-C
D051	8-719-303-64	DIODE SEL4510C-C
D052	8-719-303-64	DIODE SEL4510C-C
D053	8-719-303-64	DIODE SEL4510C-C
D054	8-719-303-64	DIODE SEL4510C-C
D055	8-719-303-64	DIODE SEL4510C-C
D056	8-719-303-59	DIODE SEL1910W
D057	8-719-200-77	DIODE 10E2N
D201	8-719-910-75	DIODE HZ7B2L
D501	8-719-940-76	DIODE 1SS132
D502	⚠8-719-910-62	DIODE HZ6A2L
D503	8-719-940-76	DIODE 1SS132
D504	8-719-940-76	DIODE 1SS132
D601	8-719-940-76	DIODE 1SS132
D602	⚠8-719-910-62	DIODE HZ6A2L
D603	8-719-940-76	DIODE 1SS132
D604	8-719-940-76	DIODE 1SS132
D700	8-719-940-76	DIODE 1SS132
D701	8-719-200-77	DIODE 10E2N
D702	8-719-940-76	DIODE 1SS132
D703	8-719-940-76	DIODE 1SS132
D800	8-719-910-52	DIODE HZ15-2L
D802	8-719-200-80	DIODE D300
D803	8-719-200-80	DIODE D300
D804	8-719-910-52	DIODE HZ15-2L
F1	⚠1-532-748-11	(US,Canadian)....FUSE, GLASS TUBE 6.3A
F1	⚠1-532-237-00	(AEP,G-AEP,UK)...FUSE, TIME-LAG T3.15A
F2	⚠1-532-286-00	(AEP,G-AEP,UK)...FUSE, TIME-LAG T2.5A
IC100	8-759-923-90	IC BA4560
IC300	8-759-600-02	IC M5218L
IC700	8-759-101-23	IC UPC1237HA
J100	1-507-911-11	JACK, PIN 6P
J101	1-507-911-11	JACK, PIN 6P
J102	1-507-788-00	JACK, PIN 4P
J500	1-507-855-00	JACK, LARGE TYPE (HEADPHONES)
L100	1-413-101-00	(G-AEP)...COIL, INPUT 220M
L101	1-413-101-00	(G-AEP)...COIL, INPUT 220M
L200	1-413-101-00	(G-AEP)...COIL, INPUT 220M
L201	1-413-101-00	(G-AEP)...COIL, INPUT 220M
L500	*1-420-872-00	COIL, AIR CORE
L600	*1-420-872-00	COIL, AIR CORE
Q050	8-729-600-27	TRANSISTOR 2SC634SP
Q051	8-729-117-54	TRANSISTOR 2SA1175
Q100	8-729-354-52	TRANSISTOR 2SC2545

ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q101	8-729-354-52	TRANSISTOR 2SC2545
Q200	8-729-354-52	TRANSISTOR 2SC2545
Q201	8-729-354-52	TRANSISTOR 2SC2545
Q501 ⚠	8-729-697-92	TRANSISTOR 2SA979
Q502 ⚠	8-729-178-54	(US,Canadian)....TRANSISTOR 2SC2785
Q502 ⚠	8-729-600-27	(AEP,G-AEP,UK)...TRANSISTOR 2SC634SP
Q503 ⚠	8-729-178-54	(US,Canadian)....TRANSISTOR 2SC2785
Q503	8-729-600-27	(AEP,G-AEP,UK)...TRANSISTOR 2SC634SP
Q504	8-729-104-91	TRANSISTOR 2SA1383
Q505	8-729-107-25	TRANSISTOR 2SD1585-L
Q506 ⚠	8-729-104-18	TRANSISTOR 2SC3514
Q507 ⚠	8-729-178-54	(US,Canadian)....TRANSISTOR 2SC2785
Q507 ⚠	8-729-600-27	(AEP,G-AEP,UK)...TRANSISTOR 2SC634SP
Q508 ⚠	8-729-117-54	TRANSISTOR 2SA1175
Q509 ⚠	8-729-107-53	(US,Canadian)....TRANSISTOR 2SC2275A
Q509 ⚠	8-729-127-53	(AEP,G-AEP,UK)...TRANSISTOR 2SC2275
Q510 ⚠	8-729-118-52	(AEP,G-AEP,UK)...TRANSISTOR 2SA985
Q510 ⚠	8-729-190-53	(US,Canadian)....TRANSISTOR 2SA985A
Q511 ⚠	8-729-304-32	TRANSISTOR 2SC3855
Q512 ⚠	8-729-304-29	TRANSISTOR 2SA1491
Q513 ⚠	8-729-108-14	TRANSISTOR 2SA988
Q514	8-729-108-05	TRANSISTOR 2SC1841-PA
Q601 ⚠	8-729-697-92	TRANSISTOR 2SA979
Q602 ⚠	8-729-178-54	(US,Canadian)....TRANSISTOR 2SC2785
Q602 ⚠	8-729-600-27	(AEP,G-AEP,UK)...TRANSISTOR 2SC634SP
Q603	8-729-178-54	(US,Canadian)....TRANSISTOR 2SC2785
Q603 ⚠	8-729-600-27	(AEP,G-AEP,UK)...TRANSISTOR 2SC634SP
Q604	8-729-104-91	TRANSISTOR 2SA1383
Q605	8-729-107-25	TRANSISTOR 2SD1585-L
Q606 ⚠	8-729-104-18	TRANSISTOR 2SC3514
Q607 ⚠	8-729-178-54	(US,Canadian)....TRANSISTOR 2SC2785
Q607 ⚠	8-729-600-27	(AEP,G-AEP,UK)...TRANSISTOR 2SC634SP
Q608 ⚠	8-729-117-54	TRANSISTOR 2SA1175
Q609 ⚠	8-729-107-53	(US,Canadian)....TRANSISTOR 2SC2275A
Q609 ⚠	8-729-127-53	(AEP,G-AEP,UK)...TRANSISTOR 2SC2275
Q610 ⚠	8-729-118-52	(AEP,G-AEP,UK)...TRANSISTOR 2SA985
Q610 ⚠	8-729-190-53	(US,Canadian)....TRANSISTOR 2SA985A
Q611 ⚠	8-729-304-32	TRANSISTOR 2SC3855
Q612 ⚠	8-729-304-29	TRANSISTOR 2SA1491
Q613 ⚠	8-729-108-14	TRANSISTOR 2SA988
Q614	8-729-108-05	TRANSISTOR 2SC1841-PA
Q700	8-729-806-16	TRANSISTOR 2SA1346
Q800	8-729-107-25	TRANSISTOR 2SD1585-L
Q801	8-729-202-67	TRANSISTOR 2SK246GR3
Q803	8-729-202-67	TRANSISTOR 2SK246GR3
Q804	8-729-111-67	TRANSISTOR 2SB1094-L
RO51	1-247-750-11	CARBON 680 5% 1/2W
RO52	1-247-701-11	CARBON 120 5% 1/4W
RO53	1-247-750-11	CARBON 680 5% 1/2W
RO54	1-247-713-11	CARBON 1K 5% 1/4W
RO55	1-247-725-11	CARBON 10K 5% 1/4W
RO57	1-247-713-11	CARBON 1K 5% 1/4W
RO58	1-247-708-11	CARBON 470 5% 1/4W
R100	1-215-493-00	CARBON 1M 5% 1/6W
R101	1-249-413-11	CARBON 470 5% 1/6W

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ELECTRICAL PARTS

Ref.No.	Part No.	Description
R102	1-215-493-00	CARBON 1M 5% 1/6W
R103	1-249-413-11	(G-AEP)...CARBON 470 5% 1/6W
R104	1-215-493-00	CARBON 1M 5% 1/6W
R105	1-249-413-11	CARBON 470 5% 1/6W
R106	1-215-493-00	CARBON 1M 5% 1/6W
R107	1-249-413-11	(G-AEP)...CARBON 470 5% 1/6W
R108	1-249-417-11	(G-AEP)...CARBON 1K 5% 1/6W
R109	1-249-413-11	(G-AEP)...CARBON 470 5% 1/6W
R110	1-215-493-00	CARBON 1M 5% 1/6W
R111	1-249-413-11	(G-AEP)...CARBON 470 5% 1/6W
R112	1-249-413-11	(G-AEP)...CARBON 470 5% 1/6W
R113	1-249-417-11	(G-AEP)...CARBON 1K 5% 1/6W
R114	1-249-405-11	CARBON 100 5% 1/6W
R115	1-249-441-11	CARBON 100K 5% 1/6W
R116	1-249-405-11	CARBON 100 5% 1/6W
R117	1-249-441-11	CARBON 100K 5% 1/6W
R118	1-249-429-11	CARBON 10K 5% 1/6W
R119	1-249-392-11	CARBON 8.2 5% 1/6W
R120	1-249-404-00	CARBON 82 5% 1/6W
R121	1-249-438-11	CARBON 56K 5% 1/6W
R122	1-249-425-11	CARBON 4.7K 5% 1/6W
R124	1-249-409-11	CARBON 220 5% 1/6W
R125	1-249-421-11	CARBON 2.2K 5% 1/6W
R126	1-249-417-11	CARBON 1K 5% 1/6W
R127	1-249-417-11	CARBON 1K 5% 1/6W
R128	1-249-407-11	CARBON 150 5% 1/6W
R129	1-215-493-00	CARBON 1M 5% 1/6W
R130	1-215-493-00	CARBON 1M 5% 1/6W
R131	1-215-493-00	CARBON 1M 5% 1/6W
R200	1-215-493-00	CARBON 1M 5% 1/6W
R201	1-249-413-11	CARBON 470 5% 1/6W
R202	1-215-493-00	CARBON 1M 5% 1/6W
R203	1-249-417-11	(G-AEP)...CARBON 1K 5% 1/6W
R204	1-215-493-00	CARBON 1M 5% 1/6W
R205	1-249-413-11	CARBON 470 5% 1/6W
R206	1-215-493-00	CARBON 1M 5% 1/6W
R207	1-249-417-11	(G-AEP)...CARBON 1K 5% 1/6W
R208	1-249-417-11	(G-AEP)...CARBON 1K 5% 1/6W
R209	1-249-417-11	(G-AEP)...CARBON 1K 5% 1/6W
R210	1-215-493-00	CARBON 1M 5% 1/6W
R211	1-249-417-11	(G-AEP)...CARBON 1K 5% 1/6W
R212	1-249-417-11	(G-AEP)...CARBON 1K 5% 1/6W
R213	1-249-417-11	(G-AEP)...CARBON 1K 5% 1/6W
R214	1-249-405-11	CARBON 100 5% 1/6W
R215	1-249-441-11	CARBON 100K 5% 1/6W
R216	1-249-405-11	CARBON 100 5% 1/6W
R217	1-249-441-11	CARBON 100K 5% 1/6W
R218	1-249-429-11	CARBON 10K 5% 1/6W
R219	1-249-392-11	CARBON 8.2 5% 1/6W
R220	1-249-404-00	CARBON 82 5% 1/6W
R221	1-249-438-11	CARBON 56K 5% 1/6W
R222	1-249-425-11	CARBON 4.7K 5% 1/6W
R224	1-249-409-11	CARBON 220 5% 1/6W
R226	1-249-417-11	CARBON 1K 5% 1/6W
R227	1-249-417-11	CARBON 1K 5% 1/6W
R228	1-249-407-11	CARBON 150 5% 1/6W
R229	1-215-493-00	CARBON 1M 5% 1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
R230	1-215-493-00	CARBON	1M	5%	1/6W	
R231	1-215-493-00	CARBON	1M	5%	1/6W	
R300	1-247-725-11	CARBON	10K	5%	1/4W	
R301	1-249-468-11	CARBON	82K	5%	1/4W	
R302	1-246-529-00	CARBON	220K	5%	1/4W	
R303	1-246-545-00	CARBON	1M	5%	1/4W	
R304	1-249-460-11	CARBON	15K	5%	1/4W	
R305	1-247-713-11	CARBON	1K	5%	1/4W	
R306	1-246-529-00	CARBON	220K	5%	1/4W	
R307	1-249-459-11	CARBON	12K	5%	1/4W	
R308	1-246-529-00	CARBON	220K	5%	1/4W	
R309	1-247-725-11	CARBON	10K	5%	1/4W	
R310	1-249-552-91	CARBON	1K		1/4W	
R311	1-247-722-11	CARBON	5.6K	5%	1/4W	
R312	1-247-710-11	CARBON	560	5%	1/4W	
R313	1-249-463-11	CARBON	27K	5%	1/4W	
R314	1-247-718-11	CARBON	2.7K		1/4W	
R315	1-246-545-00	CARBON	1M	5%	1/4W	
R316	1-247-706-11	CARBON	330	5%	1/4W	
R400	1-247-725-11	CARBON	10K	5%	1/4W	
R401	1-249-468-11	CARBON	82K	5%	1/4W	
R402	1-246-529-00	CARBON	220K	5%	1/4W	
R403	1-246-545-00	CARBON	1M	5%	1/4W	
R404	1-249-460-11	CARBON	15K	5%	1/4W	
R405	1-247-713-11	CARBON	1K	5%	1/4W	
R406	1-246-529-00	CARBON	220K	5%	1/4W	
R407	1-249-459-11	CARBON	12K	5%	1/4W	
R408	1-246-529-00	CARBON	220K	5%	1/4W	
R409	1-247-725-11	CARBON	10K	5%	1/4W	
R410	1-249-552-91	CARBON	1K		1/4W	
R411	1-247-722-11	CARBON	5.6K	5%	1/4W	
R412	1-247-710-11	CARBON	560	5%	1/4W	
R413	1-249-463-11	CARBON	27K	5%	1/4W	
R414	1-247-718-11	CARBON	2.7K		1/4W	
R415	1-246-545-00	CARBON	1M	5%	1/4W	
R416	1-247-706-11	CARBON	330	5%	1/4W	
R501	1-249-552-91	CARBON	1K		1/4W	
R502	1-249-497-11	CARBON	33K		1/4W	
R503	1-247-717-11	CARBON	2.2K	5%	1/4W	
R504	1-247-710-11	(G-AEP)...CARBON	560	5%	1/4W	
R504	1-247-706-11	(US,Canadian,AEP,UK) ....CARBON	330	5%	1/4W	
R505	⚠1-247-704-11	CARBON	220	5%	1/4W	F
R506	⚠1-247-704-11	CARBON	220	5%	1/4W	F
R507	1-249-497-11	CARBON	33K		1/4W	

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
R508	1-247-718-11	(AEP,G-AEP,UK)..CARBON	2.7K	5%	1/4W	
R508	1-247-716-11	(US,Canadian)...CARBON	1.8K	5%	1/4W	
R509	⚠1-247-692-11	CARBON	22	5%	1/4W	F
R510	1-247-725-11	CARBON	10K	5%	1/4W	
R511	1-247-726-11	CARBON	33K	5%	1/4W	
R512	1-249-462-11	CARBON	22K	5%	1/4W	
R513	1-249-460-11	CARBON	15K		1/4W	
R514	1-247-719-11	CARBON	3.3K	5%	1/4W	
R515	1-247-713-11	CARBON	1K	5%	1/4W	
R516	⚠1-247-692-11	CARBON	22	5%	1/4W	F
R517	⚠1-247-700-11	CARBON	100	5%	1/4W	F
R518	⚠1-247-700-11	CARBON	100	5%	1/4W	F
R519	⚠1-247-719-11	CARBON	3.3K	5%	1/4W	F
R520	⚠1-247-713-11	CARBON	1K	5%	1/4W	F
R521	⚠1-247-713-11	CARBON	1K	5%	1/4W	F
R522	⚠1-247-717-11	(US,Canadian) ...CARBON	2.2K	5%	1/4W	F
R522	⚠1-247-718-11	(AEP,G-AEP,UK)...CARBON	2.7K	5%	1/4W	F
R523	1-249-455-11	(US)...CARBON	4.7	5%	1/4W	F
R524	⚠1-247-745-11	(US)...CARBON	330	5%	1/2W	F
R525	1-249-455-11	(US)...CARBON	4.7	5%	1/4W	F
R526	1-214-789-00	RES, METAL PLATE	0.1			
R527	1-214-789-00	RES, METAL PLATE	0.1			
R530	1-247-700-11	CARBON	100	5%	1/4W	F
R531	1-249-460-11	(US,Canadian)....CARBON	15K	5%	1/4W	
R531	1-247-721-11	(AEP,G-AEP,UK)...CARBON	4.7K	5%	1/4W	
R532	1-247-727-11	CARBON	10	5%	1/2W	
R533	1-249-465-11	CARBON	47K	5%	1/4W	
R534	1-247-727-11	CARBON	10	5%	1/2W	
R535	1-247-713-11	(G-AEP)...CARBON	1K		1/4W	
R597	⚠1-215-890-11	(AEP,G-AEP,UK)...METAL OXIDE	470	5%	2W	F
R597	⚠1-216-456-00	(US,Canadian)....METAL OXIDE	820	5%	2W	F
R598	1-247-727-11	(G-AEP)...CARBON	10	5%	1/2W	
R599	1-247-727-11	(G-AEP)...CARBON	10	5%	1/2W	
R601	1-249-552-91	CARBON	1K		1/4W	
R602	1-249-497-11	CARBON	33K		1/4W	
R603	1-247-717-11	CARBON	2.2K	5%	1/4W	
R604	1-247-710-11	(G-AEP).....CARBON	560	5%	1/4W	
R604	1-247-706-11	(US,Canadian)...CARBON	330	5%	1/4W	
R605	⚠1-247-704-11	CARBON	220	5%	1/4W	F
R606	⚠1-247-704-11	CARBON	220	5%	1/4W	F
R607	1-249-497-11	CARBON	33K		1/4W	
R608	1-247-718-11	(AEP,G-AEP,UK)...CARBON	2.7K	5%	1/4W	
R608	1-247-716-11	(US,Canadian)....CARBON	1.8K	5%	1/4W	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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ELECTRICAL PARTS

Ref.No.	Part No.	Description
R609	⚠1-247-692-11	CARBON 22 5% 1/4W F
R610	1-247-725-11	CARBON 10K 5% 1/4W
R611	1-247-726-11	CARBON 33K 5% 1/4W
R612	1-249-462-11	CARBON 22K 5% 1/4W
R613	1-249-460-11	CARBON 15K 1/4W
R614	1-247-719-11	CARBON 3.3K 5% 1/4W
R615	1-247-713-11	CARBON 1K 5% 1/4W
R616	⚠1-247-692-11	CARBON 22 5% 1/4W F
R617	⚠1-247-700-11	CARBON 100 5% 1/4W F
R618	⚠1-247-700-11	CARBON 100 5% 1/4W F
R619	⚠1-247-719-11	CARBON 3.3K 5% 1/4W F
R620	⚠1-247-713-11	CARBON 1K 5% 1/4W F
R621	⚠1-247-713-11	CARBON 1K 5% 1/4W F
R622	⚠1-247-717-11	(US,Canadian)...CARBON 2.2K 5% 1/4W F
R622	⚠1-247-718-11	(AEP,G-AEP,UK)..CARBON 2.7K 5% 1/4W F
R623	1-249-455-11	CARBON 4.7 5% 1/4W F
R624	⚠1-247-745-11	CARBON 330 5% 1/2W F
R625	1-249-455-11	CARBON 4.7 5% 1/4W F
R626	1-214-789-00	RES, METAL PLATE 0.1
R627	1-214-789-00	RES, METAL PLATE 0.1
R630	1-247-700-11	CARBON 100 5% 1/4W F
R631	1-247-721-11	(AEP,G-AEP,UK)..CARBON 4.7K 5% 1/4W
R631	1-249-460-11	(US,Canadian)...CARBON 15K 5% 1/4W
R632	1-247-727-11	CARBON 10 5% 1/2W
R633	1-249-466-11	CARBON 56K 5% 1/4W
R634	1-247-727-11	CARBON 10 5% 1/2W
R635	1-247-713-11	(G-AEP)...CARBON 1K 5% 1/4W
R697	⚠1-215-890-11	(AEP,G-AEP,UK)...METAL OXIDE 470 5% 2W F
R697	⚠1-216-456-00	(US,Canadian)....METAL OXIDE 820 5% 2W F
R698	1-247-727-11	(G-AEP)...CARBON 10K 5% 1/4W
R699	1-247-727-11	(G-AEP)...CARBON 10K 5% 1/4W
R700	1-247-725-11	CARBON 10K 5% 1/4W
R701	1-249-469-11	CARBON 100K 5% 1/4W
R702	1-249-469-11	CARBON 100K 5% 1/4W
R703	1-249-466-11	CARBON 56K 5% 1/4W
R704	1-249-460-11	(AEP,G-AEP,UK)...CARBON 15K 5% 1/4W
R704	1-249-462-11	(US,Canadian)....CARBON 22K 5% 1/4W
R705	1-247-719-11	CARBON 3.3K 5% 1/4W
R706	⚠1-206-723-00	(US,Canadian)....METAL OXIDE 820 5% 3W F
R706	⚠1-216-479-11	(AEP,G-AEP,UK)...METAL OXIDE 560 5% 3W F
R707	1-247-717-11	CARBON 2.2K 5% 1/4W
R803	1-215-915-11	(AEP,G-AEP,UK)...METAL OXIDE 470 5% 3W F
R803	1-216-479-11	(US,Canadian)....METAL OXIDE 560 5% 3W F
R804	1-215-915-11	(AEP,G-AEP,UK)...METAL OXIDE 470 5% 3W F
R804	1-216-479-11	(US,Canadian)....METAL OXIDE 560 5% 3W F

ELECTRICAL PARTS

Ref.No.	Part No.	Description
RV300	1-237-741-11	RES, VAR, CARBON 250K/250K (VOLUME)
RV301	1-237-739-11	RES, VAR, CARBON 100K/100K (BALANCE)
RV302	1-237-740-11	RES, VAR, CARBON 100K/100K (TREBLE)
RV303	1-237-740-11	RES, VAR, CARBON 100K/100K (BASS)
RV501	1-228-989-00	RES, ADJ, CARBON 470
RV601	1-228-989-00	RES, ADJ, CARBON 470
RY700	1-515-356-00	RELAY
S1	⚠1-554-880-11	SWITCH, PUSH (AC POWER)(1 KEY)
S101	1-571-115-11	SWITCH, SLIDE (REC OUT SELECTOR)
S102	1-571-113-11	SWITCH, PUSH (6 KEY)(INPUT SELECTOR)
S103	1-571-111-11	SWITCH, PUSH (1 KEY)(CARTRIDGE)
S300	1-571-114-11	SWITCH, PUSH (3 KEY) (MUTING/SUB SONIC/LOUDNESS)
S303	1-571-112-11	SWITCH, PUSH (1 KEY)(TONE)
S500	1-571-109-11	SWITCH, ROTARY SLIDE (SPEAKER)
T1	⚠1-448-950-11	(US,Canadian)....TRANSFORMER, POWER
T1	⚠1-448-951-11	(AEP,G-AEP,UK)...TRANSFORMER, POWER
TH700	1-800-427-00	POSISTOR
TM500	1-536-706-00	TERMINAL BOARD (SP)

ACCESSORY & PACKING MATERIAL

Part No.	Description
3-701-630-00	BAG, POLYETHYLENE
3-703-450-01	(US).....INSTRUCTION
3-769-223-11	(AEP, UK)....MANUAL, INSTRUCTION
3-769-223-21	(US).....MANUAL, INSTRUCTION
3-769-223-31	(Canadian)...MANUAL, INSTRUCTION
3-769-223-41	(G-AEP).....MANUAL, INSTRUCTION
4-858-078-00	SHEET, PROTECTION
4-911-289-01	INDIVIDUAL CARTON
4-911-290-01	CUSHION

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TROUBLESHOOTING

Symptom	Remedy
No audio	• Check power cord connection. • Check speaker and program source connections. • Check SPEAKERS selector setting. • Check INPUT SELECTOR. • Adjust VOLUME control.
No audio from one channel or unbalanced left and right volume	• Adjust BALANCE control. • Check speaker and input connections of inoperative channel.
Abrupt sound loss from both speakers	• Turn off amplifier. Check speaker terminals and connecting cords for short.
Lack of bass sound or obscure instrument position	• Check speaker +/– connections for proper phasing.
TONE controls do not work.	• Set TONE switch to ON.
Recording of the desired program source cannot be made.	• Check REC OUT SELECTOR setting.
Severe hum or noise	• TV or VTR is too close to audio system. • Move connecting cords away from transformers, motors or fluorescent lights. • Ground turntable system. • Fully insert connecting cord plugs. • Disconnect turntable ground wire when using an MM cartridge with a ground piece. • Wipe plugs and jacks with a cloth lightly moistened with methanol.

9-952-809-11

Sony Corporation
Audio Group

English
87G0593-1
Printed in Japan
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